USAID DCHA ENVIRONMENTAL THRESHOLD DECISION FOR THE ENVIRONMENTAL STATUS REPORT (ESR)

Awardee: **Mercy Corps (MC)**
DCHA Office: **Food for Peace**
Program Title: **Sawki**
Award Number: **AID-FFP-A-12-00012**
Country/Region: **Niger/West Africa**
Life of Grant: **July 2012 - June 2017**
LOA Amount: **$34,999,800**
IEE Link: **http://gemini.info.usaid.gov/egat/envcomp/document.php?doc_id=38843**

ENVIRONMENTAL ACTION RECOMMENDED:	
Categorical Exclusion: X	**Negative Determination w/ Conditions: X**
Positive Determination:	**Deferral:**
Bureau Environmental Threshold Decision (ETD): Approval w/ Conditions	

USAID Bureau Environmental Officer Approval:

This Environmental Threshold Decision (ETD) is to inform Mercy Corps (MC) that the **FY 2017 PREP Environmental Status Report (ESR)** has been approved with Conditions by the DCHA Bureau Environmental Officer (BEO), on September 23, 2016. MC has undergone all necessary Mission and Washington clearances and meets the minimum 22 CFR 216 requirements, with the following 8 conditions and 1 recommendation for implementation.

The DCHA BEO would like to thank MC for this concise, clearly written ESR.

Summary of BEO Conditions:

Condition 1: MC must provide more detail regarding the Niger PERSUAP related activities within one month from today (09/23/2016).

Condition 2: MC is not permitted to use invasive species for tree planting activities. No activities is permitted involving *Prosopis juliflora* or *Leucaena leucocephala.*

Condition 3: MC must provide information regarding what they are teaching regarding Farmer-Managed Natural Regeneration in their trainings and lessons learned about the technique's implementation and effectiveness to the DCHA BEO within one month from today (09/23/2016).

Condition 4: MC must provide more detail regarding lessons learned from the implementation of these fertilizer activities, including education of counterfeit fertilizers, to the DCHA BEO within one month from today (09/23/2016).

Condition 5: MC must provide the water testing results and well information to the DCHA BEO within one month from today (09/23/2016).

Condition 6: MC must ensure adequate operation, maintenance and disposal of procured and constructed commodities, including solar panels.

Condition 7: MC must provide instruction to end-users on how to properly decommission a latrine.

Condition 8: MC must ensure that sufficient funds are allocated in order to ensure environmental compliance.

Recommendation 1: MC should consider planning options for climate screening and sensitivity during implementation in accordance with upcoming requirements of the US Presidential Executive Order 13677.

Issue 1: PERSUAP activities.

Discussion: The DCHA BEO would like to request details regarding SC's PERSUAP activities. The PERSUAP was mentioned in this ESR. However, the DCHA BEO would like more detail, especially with respect to the agricultural aspects. How is the PERSUAP's implementation proceeding? What is the status of training professionals going? The DCHA BEO is particularly concerned with MC lessons learned as related to: quality assurance, personal protective equipment, counterfeit pesticides, etc. Please respond to these questions and provide any further updates regarding PERSUAP implementation to the DCHA BEO.

Condition 1: MC must provide more detail regarding the Niger PERSUAP related activities within one month from today (09/23/2016).

Issue 2: Invasive Tree Species

Discussion: As MC should be well aware, tree planting efforts, if not carefully thought out, can have unintended negative consequences and introduce invasive species that will reproduce in a rapid or uncontrollable manner into an area. Some accepted "local" species may in fact be invasive. Invasives can impact native plants, animals, and other ecosystems, as well as impact human livelihoods, agricultural activities, and even increase flood risk due to clogging of drainage canals, etc. Controlling damages from invasive species can be extremely costly and sometimes nearly irreversible. MC mentions in the ESR, "Sawki activities in year 5 includes replanting of degraded pastoral land with forest tree seedlings that are well adapted to the region and land rehabilitation by the construction of half-moons has increased water retention thereby reducing the water erosion effects on the top oil with overall reduced environmental impacts." (p. 5)

Since MC does not mention the seedlings species that they are planning on using, the DCHA BEO wants to call MC's attention to two invasive species that should not be used.

Mesquite or *Prosopis juliflora*:
"Global concern about deforestation caused by fuelwood shortages prompted the introduction of *Prosopis juliflora*to many tropical areas in the 1970s and 1980s. *P. juliflora* is a hardy nitrogen-fixing tree that is now recognised as one of the world's most invasive alien species.[. . .] Strong local support for eradication and replacement appears to be well justified. Sustainable utilisation will require considerable investment and institutional innovation." Source: http://www.conservationandsociety.org/article.asp?issn=0972-4923;year=2008;volume=6;issue=2;spage=130;epage=140;aulast=Mwangi

Leucaena leucocephala:
"*L. leucocephala* has a number of biological characteristics which are regarded as indicating invasive tendency and make it difficult to control, e.g. precocious year-round flowering and fruiting, abundant seed production, self-fertility, a hard seed coat, an ability to build up a seed bank, and ability to resprout after fire or cutting." Source: http://www.cabi.org/isc/datasheet/31634

Condition 2: MC is not permitted to use invasive species for tree planting activities. No activities is permitted involving *Prosopis juliflora* or *Leucaena leucocephala.*

Issue 3: Farmer-Managed Natural Regeneration activities.

Discussion: The DCHA BEO notices that MC is training farmers in Farmer-Managed Natural Regeneration.[1] When MC's original Initial Environmental Examination (IEE) was approved in 2012, MC presented information about Farmer-Managed Natural Regeneration and its potential benefits for this project. However, the BEO has not received a detailed update about the effectiveness and lessons learned from the Farmer-Managed Natural Regeneration training and implementation. Additionally, the BEO is interested in what MC is teaching farmers about Farmer-Managed Natural Regeneration at the trainings and how farmers are responding.

Condition 3: MC must provide information regarding what they are teaching regarding Farmer-Managed Natural Regeneration in their trainings and lessons learned about the technique's implementation and effectiveness to the DCHA BEO within one month from today (09/23/2016).

Issue 4: Fertilizer activities.

Discussion: The DCHA BEO appreciates MC mentioning their fertilizer activities throughout the ESR. The ESR notes, for example, that the, "Farmer Field School trials showed greatly enhanced yield using micro-doses of mineral fertilizers combined with green manure." (p. 5) Concerning the range of risks associated with fertilizers, the DCHA BEO is concerned about the limited information provided in the ESR regarding the fertilizers.

[1] "Train farmers in conservation farming best practices (minimum tillage, mulch, agroforestry through farmer-managed natural regeneration of trees, organic and mineral fertilizers, bio- insecticide)" (p. 9, 10)

"Dodgy" Fertilizers: As noted in this The Guardian article, the sell of counterfeit, diluted, or adulterated fertilizers is a concern. The ESR should must make mention of how the project will address the issue of counterfeit fertilizers and educate the community on this issue. While very challenging, the risk should be made known to the beneficiaries, especially so that those using fertilizers will be conscious of this problem after the program has ended.

The DCHA BEO would like to request that additional information is provided by MC regarding any environmental issues, best environmental practices, and/or lessons learned from the implementation of these fertilizer activities within the context of prevailing biophysical and socio-economic conditions. The DCHA BEO is also interested in learning how MC might address the issue of counterfeit fertilizers within SAWKI.

Condition 4: MC must provide more detail regarding lessons learned from the implementation of these fertilizer activities, including education of counterfeit fertilizers, to the DCHA BEO within one month from today (09/23/2016).

Issue 5: Water quality testing results and well water compliance.

Discussion: The DCHA BEO is pleased to note that MC is planning to, "make sure that the water management committees put in place a water quality plan with a periodical testing of water quality (Arsenic test and microbiological tests)." (p. 3) The EMMP table also mentions that it will monitor the "# of wells with water quality compliant with WHO 4th edition standards." (p. 7) However although the ESR mentions this, MC does not provide results from the water testing in this ESR or state the number of wells with water quality compliant with WHO 4th edition standards. Water testing results are important for ensuring environmental compliance and the DCHA BEO would like to see those results and also like to know how many wells, so far, are in water quality compliance.

Condition 5: MC must provide the water testing results and well information to the DCHA BEO within one month from today (09/23/2016).

Issue 6: Adequate operation and maintenance of procured commodities ensures their long term sustainability and efficiency

Discussion: Concerning the solar powered/UV lamps, the BEO is supportive of using renewable energy as an alternative energy source, but cautions the grantee that: "*Adverse environmental impacts associated with solar energy include pollution caused during the manufacture of solar devices, acid battery spillage, and improper disposal of batteries".*[2] Additionally, according to the United States government's Solar EIS project *"[p]hotovoltaic panels may contain hazardous materials, and although sealed under normal operating conditions, there is the potential for environmental contamination if they [are] damaged or improperly disposed upon decommissioning*."[3]

While USAID fully promotes the use of alternative energy sources such as the use of photovoltaic cells, these energy sources require planning for their siting, use, maintenance, as well as for battery, inverter and panel disposal or recycling. As noted in a recent IUCN renewable energy fact sheet[4], solar panels can provide ideal energy solutions for rural communities, however, their use does generate electronic wastes (inverters) and potentially harmful lead-acid battery[5] wastes that need to be disposed of properly when used inverters and batteries need to be replaced by new ones. Environmental contamination is possible if panels are damaged or if other equipment, such as batteries, are improperly handled. Best management practices here include ensuring that batteries are not opened or drained, and preventing the lead from entering the environment, especially the food-chain. For more information, consult the Solar Energy Development Programmatic EIS Information Center[6].

For improved efficiency and environmental compliance, the grantee is requested to develop operation and maintenance schedules for these commodities, which should also include measures for the appropriate disposal of solar panels and batteries to be procured once they become obsolete or beyond repair, with a "recycle" option if possible.

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[2] USAID EGSSAA Guidelines on Energy Sources for Small-Scale Development
http://www.encapafrica.org/egssaa/energy.pdf
[3] Solar Energy Development Environmental Considerations
http://solareis.anl.gov/guide/environment/
[4] IUCN (2012):
ttps://cmsdata.iucn.org/downloads/solar_photovoltaic_pacific_renewable_energy_factsheets_2012.pdf
[5] Battery Council International: http://batterycouncil.org/?page=battery_recycling
[6] Solar Energy Development Environmental Considerations
http://solareis.anl.gov/guide/environment/

Condition 6: MC must ensure adequate operation, maintenance and disposal of procured and constructed commodities, including solar panels.

Issue 7: The ESR does not include mitigation measures or reference the decommissioning of latrines.

Discussion: The ESR mentions construction of latrines and discusses some impacts associated with latrine construction. However, latrine activities can lead to environmental impacts, such as water contamination, from a failure to properly decommission a latrine after it is full. Especially as this project is drawing to a close, providing information to users about the proper decommissioning of the latrines is important in order to ensure that the latrines are used and closed up appropriately in the future.

The ESR fails to mention any activity related to the decommissioning of the latrines. This Operation and Maintenance Guideline from the "Excreta Disposal in Emergencies" by UNICEF[7] provides relevant information regarding the decommissioning of latrines in section 8.8. USAID has also provided some more general information about operation and maintenance of latrines in the Sector Environmental Guidelines for Water Supply and Sanitation. One additional resource the BEO would like to point MC to is the guide for Sanitation for Primary School in Africa by the Water, Engineering and Development Centre at Loughborough University. This guide provides additional details about decommissioning of latrines. The BEO recommends that MC reviews these guidelines and incorporate decommissioning best practices into their latrine projects. For example, MC may consider the planting of vegetation on the latrine sites, the disinfection of the site, the appropriate time of year to decommission a latrine, etc.

Condition 7: MC must provide instruction to end-users on how to properly decommission a latrine.

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[7]"Excreta Disposal in Emergencies", UNICEF, http://www.unicef.org/eapro/activities_7081.html

Issue 8: Environmental Budgeting.

Discussion: The DCHA BEO wants to remind MC to appropriately budget funds for environmental staffing, training, activities, etc. A budget review for MC was not done during the technical review of this ESR. However, the DCHA BEO would like to emphasise the importance of environmental budgeting. For direction and guidance in developing a budget for environmental compliance and management activities within a development program, USAID has developed an Environmental Compliance Budgeting Toolkit. This toolkit has sections to assist both budget developers and selection committee members who review proposal budgets.

Condition 8: MC must ensure that sufficient funds are allocated in order to ensure environmental compliance.

Issue 9: Awareness raising on the Climate Change Executive Order 13677.

Discussion: MC should incorporate the US Presidential Executive Order on Climate-Resilient International Development. The memorandum states that climate-resilience considerations must be incorporated into international development work. MC should be aware of this Executive Order from previous DCHA BEO ETDs but no comments about its incorporation into the project were included in this ESR. The complete Executive Order is available at: www.gpo.gov/fdsys/pkg/FR-2014-09-26/pdf/2014-23228.pdf.

Recommendation 1: MC should consider planning options for climate screening and sensitivity during implementation in accordance with upcoming requirements of the US Presidential Executive Order 13677.

Title II Environmental Status Report Facesheet

SAWKI/DFAP-NIGER
FY 2017

Title of DFAP: SAWKI Development Food Aid Program (DFAP)

Awardee: Mercy Corps

Host Country or Region: Niger/West Africa

Award Number: AID-FFP-A-12-00012

Life of Activity: FY12-FY17

Fiscal Year of Submission: FY 2017

Note: the following information is for the fiscal year of submission.

Funding Begin: 08/17/2012	**LOA Amount:** $ 29,999,500
Funding End: 08/31/2017	**Sub-Activity Amount:** $

Resource Levels:		**Food Aid Commodity:** 160 MT
Community Development Funds Request: $ 4,000,000 CDF resources	**202(e):** $1,406,900	**ITSH:** $ 1,935,900

ESR Prepared by: James Bariyanga, Chief of Party	**Date:** 06/24/2016

Date of Previous ESR: December 11, 2015	**Date of Most Recent IEE:** June 22, 2015 amended Dec 11, 2015
Contact*: Thierno Samba Diallo, Country Director tdiallo@mercycorps.org ; Phone: 0022796993182	

** Awardees should include contact information (name, phone numbers and email addresses) for staff responsible for the record keeping of the food aid program. Responsible awardee staff should have the ability to access all of the food aid program's files in the field, at headquarters, in storage or elsewhere, as required.*

Title II Environmental Status Report

A. Status of the Initial Environmental Estimate

☒ **No revisions or modifications** of the Initial Environmental Estimate (IEE) are needed.

☐ An amended IEE is submitted, based on the attached PERSUAP report, and the modified or new activities as described below and in table 4.0 of the IEE: Activities, Impacts, and Mitigation Actions.

B. Status of Fulfilling Conditions in the Initial Environmental Estimate, including Mitigation and Monitoring

☒ **An Environmental Status Report describing compliance measures taken is attached**

C. Food for Peace Approval of the Environmental Status Report

Food for Peace Mission or Regional Office, as appropriate*:

Food for Peace Officer Abdou Ndiaye (Cleared by email, see next page) Date: 8/30/2016

Environmental Officer Mike Heller (Cleared by email, see next page) Date: 8/30/2016

Food for Peace, Washington

DCHA Bureau Environmental Officer Erika J. Clesceri Date: 9/22/2016

**** FFP/M/R environmental officer clearance is mandatory; clearance by the FFP/M/R FFP officer is optional.***

Clearances for DCHA FFP Niger SC and MC ESRs?

Michael Heller <mheller@usaid.gov> 30 de agosto de 2016, 10:17
Para: Abdourahmane Ndiaye <abndiaye@usaid.gov>
Cc: Erika Clesceri <eclesceri@usaid.gov>, Camilien Saint-Cyr <csaint-cyr@usaid.gov>, DCHA GEMS Support <dchagemssupport@smtn.org>

I clear on both.

Thank you, Erika and Abdou.

Mike

On Tue, Aug 30, 2016 at 12:09 PM, Abdourahmane Ndiaye <abndiaye@usaid.gov> wrote:

> Dear Erika,
>
> I clear on the two documents by email.
>
> Note: After I've reviewed, I was just waiting for the FFP Officer's clearance before clearing.
>
> Thank you very much and best regards,
> Abdou
>
> **Abdourahmane Ndiaye**
> Regional Environmental Compliance Specialist
> Sahel Regional Office
> **USAID/SENEGAL**
> American Embassy
> Route des Almadies, Dakar
> Phone: +221 33 879 4000 extension : 4964
> Mobile: +221 77 561 49 45
>
> On Tue, Aug 30, 2016 at 3:29 PM, Erika Clesceri <eclesceri@usaid.gov> wrote:
>
> > Dear Mike and Abdou,
> >
> > Hope this email finds you well. I am checking in on the clearances for Niger SC and MC ESRs. If you could please send me those clearances then I can move forward in providing final clearance on both ESRs.
> >
> > Thanks,
> > Erika
> >
> > Erika Clesceri, Ph.D.
> > DCHA Bureau Environmental Officer (BEO)
> > Bureau for Democracy, Conflict and Humanitarian Assistance
> > U.S. Agency for International Development
> > Washington DC (USA)
> > (w) 202-712-0453, eclesceri@usaid.gov
> > DCHA BEO Google Site

Environmental Status Report
Sawki DFAP/ NIGER
FY 2017

A. Status of the Initial Environmental Estimate

i. Modified or New Activities

N/A

ii. Resolution of Deferrals

There was no deferral in the previous IEE.

iii. Conditions

The Sawki program recognizes and complies with the conditions required by DCHA-BEO in the approval of Sawki's FY14 ESR. Specifically, the program is taking the following measures related to the 4 conditions given:

Condition 1: The IEE-A must, in addition to acknowledging the PERSUAP prepared by CRS/MC/SCI, link specific activities to the PERSUAP in the IEE conditions/EMMP.

- *Please see Section B below for a description of environmental mitigation measures implemented thus far.*

Condition 2: Mercy Corps shall incorporate the requirements of the PERSUAP into all trainings/training curricula, or through all assistance (financial, technical, etc.) that may include the promotion, use, or procurement of pesticides.

- *Please see Section B of the IEE(A).*

Condition 3: Revise the EMMP to incorporate the suggested language and content as described in "Discussion 3" of this ETD

- *Specific mitigation measures are described in the updated EMMP (attached).*
- *Sawki does not have activities A.2.1.3.2(ii) and A.2.1.3.2(iii). The program does not have feeder road construction activity.*

Condition 4: Subsidies and financial support services provided to encourage or facilitate increased procurement or use of pesticides or veterinary pharmaceuticals must align with the FFP Niger Agricultural Crop, Livestock, and Commodity Procurement PERSUAP.

- *Please see revised determination in table 4.1 and revised EMMP table 4.2.*

Updates to the Initial Environmental Examination

Based on the above, is an updated IEE needed?

☐Yes (If yes, attach here.) No ☒

If the previous documentation was a categorical exclusion submission, is an updated categorical exclusion needed to deal with new categorical exclusions for new activities?

☐Yes (If yes, attach here.) No ☐ Not Applicable☒

B. Status of Fulfilling Initial Environmental Estimate Conditions

For activities in which a negative determination with conditions was found, the following mitigation actions have been implemented thus far in the program:

A.1.1.3. Train HHs on the preparation and consumption of nutrient-rich foods and animal products:

During cooking demonstrations for the promotion of nutritious foods, Sawki field agents promote safe cooking practices to minimize health risks to adults and children. In IY5, the program will promote the use of improved cooking stoves that will reduce the consumption of fuel wood while reducing health risks (of smoke inhalation, burns). No adverse effects have thus far been reported by program staff as a result of cooking demonstrations.

A.1.1.4. Rehabilitate/construct wells in communities:

Selection and plans for the rehabilitation of water sources have been extensively discussed and decided in collaboration with the community, local governments, and water committees. Sites are selected at least 50m from contamination points such latrines, fertilized irrigation sites.
Existing, reliable water sources have been prioritized whenever possible. Grazing is controlled through a fence around the wells and animals are kept away at a distance of 50 meters. Sawki created water management committees in intervention communities. These committees are supervised by the Village Development Committees (VDC). Sawki will make sure that the water management committees put in place a water quality plan with a periodical testing of water quality (Arsenic test and microbiological tests). Sawki will touch base with testing laboratories in the country and link them to the VDC.

A 1.1.6. Identify, market and provide subsidies for cost-efficient individual solutions to improve water quality:

This activity has not yet been implemented by the program. During the well rehabilitation process, community members will be trained on the proper use of aquatabs and of their proper disposal. The program is working actively to establish in the communities the aquatab selling point in order to bring such a technology close to villagers.

A.1.1.7 Implement Community Led Total Sanitation approach:

This activity started in year 4. During year 5, the program team will continue provide technical support to the communities including best site selection and construction of latrines using local materials. These will be planned in close coordination with community leaders and stakeholders to minimize potential risk to people and the environment, and sites are selected at least 50m from a known water point. Sound construction techniques are employed to maintain hygienic conditions and reduce insects, and all latrines are paired with hand-washing structures. For new communities for year 5 (where program has yet to launch CLTS), only simple latrine models, constructed with locally available materials, will be promoted, without subsidies from the program. Instead, Sawki will reinforce sensitization by program there will be no subsidies under CLTS and the program will provide non-monetary incentives in appreciation to the best performing villages after auto-evaluation exercises carried out by VDC. No materials for construction of latrines will be purchased or offered by the program to communities.

A 2.1.1.5 Train master trainers

A 2.1.1.6 Village Garden Coordinator training by master trainers

A 2.1.1.7 Village Garden Coordinator training - communities

Agricultural training and demonstration activities categorized as Negative Determination with Conditions, especially those that may involve the use of fertilizers, pesticides and veterinarian pharmaceuticals in the training curricula. In such cases, the Program will comply with 22CFR216.3(a)(2)(iii) of Reg. 216.

A 2.1.2.1 Vouchers to purchase input supplies
Not currently implemented.

A 2.1.5.2 Training on food processing and conservation
The program team will make follow-up visits to management committees to women groups that received grain processing mills and threshers in previous years and provide appropriate technical assistance. The program will follow the guidelines on food processing and conservation as recommended in the environmental guidelines for small scale activities in Africa (EGSSAA): df.usaid.gov/pdf_docs/Pnadk154.pdf, chapter 4.2 page 4-16. Sawki did not use any hazardous materials during the implementation of this activity.

2.2.1.2 Establish Demonstration Farms:

In FFS and women vegetable gardening activities, Sawki is training farmers to implement best practices of conservation farming (minimum tillage, mulch, agroforestry through farmer-managed natural regeneration of trees, organic fertilizer, and bio-insecticide.) Integrated pest management is promoted following the PERSUAP (attached). In the case of improved and expanded agricultural production, the communities sensitized and encouraged not to practice grass burning during site preparation and to avoid use of chemical fertilizer and pesticides in improper way. The positive results of these conservation-minded techniques have been apparent, and farmers are eager to replicate the practices in their own fields. Any use of chemicals (fertilizers, pesticides and pharmaceuticals) will adhere to recommendation of Annex 1: Crop, livestock, and commodity integrated pest management (IPM) plans of the Niger FFP Agricultural Crop, Livestock, and Commodity Storage PERSUAP.

A 2.1.4 Facilitate the rehabilitation/construction and maintenance of gardening wells and rainwater harvesting techniques:

In year five, Sawki will be completing the gardens well initially started in year 4 to support women's vegetable gardening. All 120 gardens wells will be completed in the first quarter of year 5 in both Maradi and Zinder regions. Improved gardening techniques were taught to women producers and appropriate pest management trainings were conducted by the ministry of agriculture and Sawki field agents in year 4 and this activity will continue into year five. The activity implementation adheres to recommendations of Annex 1: Crop, livestock, and commodity integrated pest management (IPM) plans of the Niger FFP Agricultural Crop, Livestock, and Commodity Storage PERSUAP.

A 2.2.3: Develop sustainable supply models for quality agricultural & livestock inputs & services; labor, cost-saving, & energy products, including information on financing and marketing opportunities as an embedded service.

Farmer Field School trials showed greatly enhanced yield using micro-doses of mineral fertilizers combined with green manure. Sawki program will follow FFP compliance guidelines for approval for the purchase and use chemical fertilizer in year 5, on the farmer-led farm field school demonstrations to scale-up agronomic practices to many households in the communities using the FFS learners that exceled and graduated from previous year FFS learning. This activity has not yet been implemented, but Sawki will ensure the proper use of fertilizer in micro-doses, and follow INRAN recommendations to mitigate any potential environmental impact.

The activities have also promoted the use of legume cover crops (plus phosphorous) and green manures by fallow rotation or intercropping, and the use conservation tillage rather than deep plowing, the use farm site manures and household wastes, with or without composting. Additionally, the program has helped farmers select crops that have high nutrient use efficiency.

A.2.2.2.6 Training for 39 para-vets at GoN veterinarian training (10 days):

Refresher training will be 39 para-vets in year 5. The para-vets who completed the training received a kit from the program and are already providing animal health services in the target communities. These local experts are using pharmaceutical products that were approved within the PERSUAP. The para-vets mostly provide pills for treatment of ruminants and will not use syringes for shots. When they treat wounds the wastes are burned in a hole.

A.2.3.1.2 Planning and Organization of FFA activities:

Sawki activities in year 5 includes replanting of degraded pastoral land with forest tree seedlings that are well adapted to the region and land rehabilitation by the construction of half-moons has increased water retention there by reducing the water erosion effects on the top soil with overall reduced environmental impacts. This activity will increase the arable land for fodder production.

TABLE 4.2: Environmental Monitoring and Mitigation Plan (EMMP)

Summary, *Mercy Corps Niger, Sawki*

Activity	Geographic Location	Potential Environmental Impact	Mitigation Activities	Monitoring (Suggest Indicators)	Achievement
A 1.1.3 Train HHs on the preparation and consumption of nutrient-rich foods and animal products (at 372 sites) (Cooking demonstrations including introduction of improved cooking stoves)	5 communes in Zinder and 3 communes in Maradi	Material deterioration over time Health risks Fire risk	Select and promote the best fuel-efficient cook stoves adapted to the local environment, based on an assessment of the cost effectiveness and fuel savings of varied cook-stoves currently promoted in Niger, and on best practices and lessons learned (such as in USAID's publication *"Fuel efficient stove programs in IDP settings – Summary Evaluation Report, UGANDA"* (sept.2007).	Amount of fuel saved Amount of time saved Improved health of women and children.	The number of fuel efficient cook stoves increase to 155, built in 3 villages; 22 villagers trained in the cook stove technologies. All required materials are available locally; this will allow people in the village to continue building their improved cooking stoves.
A 1.1.4 Rehabilitate/construct wells in communities (follow up visits to facilities constructed in year 4)	5 communes in Zinder and 3 communes in Maradi	- Loss of vegetation - Spread of water-borne disease - Destruction of wetlands - Decrease in water resources - Water contamination - Fecal contamination - Improper disposal of filter and UV lamps used in water treatment systems installed at community wells could pollute surrounding environment and ground water.	- Selection and plans for the rehabilitation of water sources should be extensively discussed and decided by the community, local governments, and water committees. Sites will be selected at least 50m from contamination points such latrines, fertilized irrigation sites. - Existing, reliable water sources will be prioritized whenever possible - All possible water sources will be subjected to appropriate water analysis to determine that the water is safe for human consumption prior to water source development - Grazing will be controlled around water sources with a fence that surrounds the wells and animals are kept 50 m away from the water point. - Vegetation clearing minimized - Replanting of lost vegetation to reduce soil erosion. - To the extent possible, human and livestock consumption areas will be separated so as to mitigate fecal contamination by constructing a protection wall for each well to avoid direct access by animals. Sound construction techniques will be used including: - covers for wide diameter wells to avoid direct contamination and mosquito breeding - surface sanitation to avoid stagnant water	- Efficiency of the water delivery system - Vegetation loss due to construction - # of trees planted following rehabilitation - Incidence of water contamination - Incidence of fecal contamination - Incidence of drying up of wells, ponds or springs - Incidence of water-borne diseases - # of wells with water quality compliant with WHO 4th edition standards (http://www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/)	32 drinking water points (well) and 12 boreholes constructed/rehabilitated. 110 gardening boreholes constructed. The security norms were met and wells situated at least 50m from contamination points; water analysis conducted. 10 follow up monitoring trips conducted show that no trees were harmed or destroyed. After construction/ rehabilitation, hard materials are always taken away by the service provider before the validation of the work.

Activity	Geographic Location	Potential Environmental Impact	Mitigation Activities	Monitoring (Suggest Indicators)	Achievement
			around wells, - keep excavation material downstream to avoid erosion, - Low concentration of water points to avoid overdrawing on underground water resources - Water Quality Assurance Plan -Water management committees will be trained on the appropriate maintenance of water treatment equipment installed at the wells. Filters will need to be replaced yearly and solar powered /UV lamps approximately 1x/10 years. Retired materials will be recycled for other purposes or disposed of safely (solar-powered water purification systems built in the covered wells using UV technology.)		32 water management committees trained on appropriate maintenance and management of water point.

Activity	Geographic Location	Potential Environmental Impact	Mitigation Activities	Monitoring (Suggest Indicators)	Achievement
A 1.1.6 Identify, market and provide subsidies for cost-efficient individual solutions to improve water quality	5 communes in Zinder and 3 communes in Maradi	- Waste from tablet *and equipment* packaging - Incorrect usage limits product effectiveness	- Waste management training including options for disposing of waste responsibly - Community members trained on tablet usage	-# of waste management trainings - # of community members trained	62 sanitation committees created and equipped - one in each village. This committee conducts monthly or weekly general sanitation.
A 1.1.7 Implement Community Led Total Sanitation approach	5 communes in Zinder and 3 communes in Maradi	- Risk of disease - Ground water contamination - Soil Erosion - Water contamination	- Site selection and construction of latrines properly planned to avoid potential risk to people and the environment by closely coordinating with community leaders and members - No latrines constructed within a set distance of known water sources or water points - Sound construction techniques by avoiding insect free movement in and out of the pit, and pairing the latrines with hand-washing structures - Vegetation clearing minimized - Replanting of lost vegetation to reduce soil erosion. - Community members sensitized on the proper use and maintenance of latrines to minimize potential spread of diseases due to flies and other insects.	- Incidence of water contamination - Incidence of fecal contamination - Incidence of diseases	The site selection and construction were properly planned. The latrines were constructed away from a known water point. The construction is done with a cover, which prevent insects and handwashing station made of tippy taps were built. The site selections avoided harming or clearing trees. 14 villages are certified open defecation free.
A 2.1.1.2 Establish Demonstration Farms	5 communes in Zinder and 3 communes in Maradi	- Decreased soil fertility, - Increased soil erosion, - Threaten bio-diversity - Generate noise and dust - Reduce water resources - Contaminate water	- Train farmers in conservation farming best practices (minimum tillage, mulch, agroforestry through farmer-managed natural regeneration of trees, organic and mineral fertilizers, bio-insecticide)	- # of farmers trained in improved agricultural production technologies and practices - Community and downstream communities report no reduction of water supply	The best practices of conservation farming were taught in farmer field school (FFS). This year 2,603 farmers attending FFS were trained in these practices. Specific practices include minimum tillage, assisted natural regeneration, micro dose of mineral fertilizer, use of biopesticides, etc.

Activity	Geographic Location	Potential Environmental Impact	Mitigation Activities	Monitoring (Suggest Indicators)	Achievement
A 2.1.4 Facilitate the rehabilitation/ construction and maintenance of gardening wells and rainwater harvesting techniques - A 2.1.4.1 Establishment of gardening wells user committees and maintenance plans (80 sites) - A 2.1.4.2 Rehabilitation or construction of gardening wells and rainwater harvesting techniques - A 2.1.4.3 FFA: small water retention basins - A.2.1.4.4 Rehabilitation of river weirs.	5 communes in Zinder and 3 communes in Maradi	- soil erosion - water-borne diseases as a result of dam and irrigation development -nutrient and agrochemical pollution due to improper fertilizer use -increased population pressure in the area -deterioration of water quality. - degradation of local ecosystem.	Site selection and construction of wells or water retention basins properly planned. - set up groundwater and surface water management programs. - develop and implement a groundwater monitoring program downstream of any proposed reservoir site to assess the suitability of soils for irrigation development. - develop and implement an integrated pest management program. - run training in soil and water management and the control of open water pools, use of pesticides, - run public health education program. -develop a local ecosystem rehabilitation and conservation plan. For details on small scale construction impacts mitigation and monitoring; see in attached *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) - Chapter3 :Small-Scale Construction	- soil erosion incidence - landscape alteration incidence - native vegetation - water-borne diseases incidence - surface water flow status - groundwater availability status - ecosystem and raw water quality status - nutrient load incidence	Technical analysis conducted for site selection and quantity and quality of underground water. Water management committees trained on proper water sanitation and farmers trained on micro dose of mineral fertilizer.
A 2.2.2.6: Training for para-vets at GoN veterinarian training (10 days)	5 communes in Zinder and 3 communes in Maradi	Increased use of veterinary supplies, including vaccinations, could pollute the local environment and cause safety hazards	- Ensure para-vet training includes proper disposal of hazardous materials, follow up including monitoring of consumption, use and disposal of materials	-observation of waste at vaccination sites	Paravet training was conducted using curricula validated by the National Program Office. Post-training follow-up was ensured by Sawki livestock team jointly with GoN offices of animal resources. Refraicher training for 30 para-vet and 44 women poultry vaccinators. Poultry vaccination was followed up and supervised by government technical agents.
A 2.2.3: Develop sustainable supply models for quality agricultural & livestock inputs & services; labor, cost-saving, & energy products, including information on financing and marketing opportunities as an	5 communes in Zinder and 3 communes in Maradi	Excessive application of nutrients over time can cause pollution, and leached nitrates may contaminate groundwater. Nitrogen fertilizers also accelerate the natural process	- Adhere to the recommendations of the USAID fertilizer Fact sheet and begin to build a more nuanced sense of soil fertility and soil quality options within the program. - The program farmer field school promotes Integrated Soil Fertility Management (ISFM) with the use of both organic and inorganic sources of	- Soil acidification (pH measures both during and the end of the cropping season)) - Monitor Eutrophication of lakes and waterways	The best practices of conservation farming are taught in farmers field school (FFS). This year 2,603 farmers attending FFS were trained in these

embedded service A.2.2.3.5 Subsidized Input Packages (Y2)		of soil acidification Excess amounts of phosphorus have been associated with algae blooms and the eutrophication of lakes and waterways. Heavy treatments of chemical fertilizers can kill decomposers and other soil organisms, which will lead to a reduction in nutrient retention and possible surface and ground water contamination.	nutrients in micro-doses. The combination of green manure and 5 grams of mineral fertilizer per square meter has proven to increase yield significantly without putting harm to the environment when necessary mitigation measures are taken and proper monitoring is done. - Through INRAN (Niger National Agriculture Research Institute) the program is teaching farmers proper ways to use micro-doses while taking into account the environmental aspect. o INRAN recommendations include a good knowledge of both the soils conditions, the plant requirements and the periods of requirement in order to minimize both losses and negative impact; o INRAN insists also in the way micro-doses are used and the way the containers and bags are disposed after utilization; o Farmers have to avoid situation where the fertilizers would pollute any water source surrounding the production area. All value-chain development projects to be piloted discussed with the communities and that no projects that pose environmental risks and negative impacts will be avoided or mitigated. - In the case of improved and expanded agricultural production, the communities sensitized and encouraged not to practice grass burning during site preparation.	- Monitor Surface and ground water contamination - Monitor quality of drinking water	practices, including minimum tillage, assisted natural regeneration, micro dose of mineral fertilizer, use of biopesticides, etc.
A 2.3.1.2 (i) Planning and Organization of FFA activities - storage units	5 communes in Zinder and 3 communes in Maradi	Fumigation of food storehouses may cause serious human health problems including respiratory tract irritation, headaches, loss of coordination, slurred speech, skin burning and rashes, diarrhea, and acute kidney and liver failure. - adverse and unwanted effects on an edible commodity alter the texture, appearance, odor, taste and germination of grains. For food storage units construction impacts, see details in attached *Environmental Guidelines for Small-Scale Activities in*	For details on mitigation of fumigation environmental impacts, see the completed attached PERSUAP. On scale construction impacts mitigation and monitoring, Sawki will follow the *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) - Chapter3 :Small-Scale Construction -Site selection near to users and easily accessible but at a safe distance from water points -Site on stable soil -Limited susceptibility to pest infestations -Avoid felling large trees for construction or clearing -Construction using local, readily available materials	See Indicators in the PERSUAP.	Degraded and bare land recovered. Construction followed strict safety standards in which proper spacing, and zero tree clearing were respected; land seeded with grass for green cover restoration. FFA

		Africa (EGSSAA) Chapter3:Small-Scale construction			management committees trained on safety norms to ensure adequate management during this process.
A 2.3.1.2(ii) Planning and Organization of FFA activities - livestock infrastructure	5 communes in Zinder and 3 communes in Maradi	- Cause erosion and damage to terrestrial and aquatic ecosystems during construction or use - Degrade forest, contributing to flooding potential - Cause environmental damage from accidental release of toxic, infectious or otherwise harmful material - Contaminate water supplies - Displace untenured residents or reduce farmers' or pastoralists' lands.	Sawki will follow the *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) - Chapter3 :Small-Scale Construction Specifically, the following mitigation measures will be adopted: -Site selection near to users and easily accessible but at a safe distance from water points -Site on stable soil -Offering adequate shade and space for livestock -Avoid felling large trees for construction or clearing -Construction using local, readily available materials	See Indicators in *Environmental Guidelines for Small Scale Activities in Africa* (EGSSAA) - Chapter3 :Small-Scale Construction	Degraded and bare land recovered. Construction followed strict safety standards in which proper spacing, and zero tree clearing were respected; land seeded with grass for green cover restoration. FFA management committees trained on safety norms, ensuring adequate management during this process. More than 20 of small trees adapted to the region have been produced in nurseries and planted on the recovered areas.

Activity	Geographic Location	Potential Environmental Impact	Mitigation Activities	Monitoring (Suggest Indicators)	Achievement
A 2.3.1.2 (iii) Planning and Organization of FFA activities - market feeder roads	5 communes in Zinder and 3 communes in Maradi	-Damage valuable ecosystems and habitats - Damage valuable historic, religious, cultural, and paleontological resources - Change local culture and society - Cause soil erosion - Degrade water quality - Alter hydrology - Contribute to deforestation	Sawki will follow the *Environmental Guidelines for Small-Scale Activities in Africa* (EGSSAA) - Chapter 14: Rural Roads Specific mitigation measures include: Clearance will be restricted to only the width of the carriageway and side drains to minimize grass and shrubs cuttings. - Resulting debris and grasses shall be spread along the road side to allow fast decomposition and growth of fresh vegetation along the community access roads instead of burning them - Plant native grass and tree species along the road - Excavation to level to embank small gullies and fill natural terrains to achieve gentle surface which minimize erosion that might escalate before compactions - Avoid felling big trees - Minimize or avoid road rehabilitation on cultivable land - Ensure proper drainage	See Indicators in *Environmental Guidelines for Small Scale Activities in Africa* (EGSSAA) - Chapter 14: Rural Roads	The program is not implementing feeder roads.